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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,804	03/09/2001	Hyung-Soo Song	8733.304.00	1434

30827 7590 09/04/2002

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1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

COLLINS, DEVEN M

ART UNIT	PAPER NUMBER
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2823

6

DATE MAILED: 09/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,804

Applicant(s)

SONG ET AL

Examiner

D. M. Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Applicant's election of Group I, claims 7-11 in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cathey, Jr. (5,100,505, dated 3/31/92) in view of Murphy et al. (6,387,822, dated 5/14/02).

Cathey, Jr. shows the method as claimed in the Figures 1-4 with corresponding text.

In re claim 7, Cathey, Jr. discloses a method of etching molybdenum (col. 4, par. 4) on a substrate (col. 3, line 48), comprising:

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preparing a solution comprising 5 to 20 % by weight of hydrogen peroxide (H₂O₂), 75 to 94% by weight of water, and an additive, including a pH controlling agent; and applying the solution to the substrate (col. 3, line 48).

“ However, Cathey, Jr. does not show hydrogen peroxide.

Murphy et al. show an application of an ozonated DI water spray to resist residue removal processes utilizing an hydrogen peroxide (H₂O₂) to remove metal contamination.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Cathey, Jr. in view of Murphy et al. to include hydrogen peroxide in an effort to improve molybdenum or molybdenum-based alloys used as electrode line in TFT-LCDs which require low production costs and good electrical characteristics.

In re claim 8, Cathey, Jr. in view of Murphy et al. discloses the method of claim 7, wherein applying the solution 120 to the substrate 108 comprises spraying the solution onto the substrate 108.

In re claim 9, Cathey, Jr. in view of Murphy et al. discloses the method of claim 7, wherein applying the solution 120 to the substrate 108 comprises immersing the substrate 108 into the solution.

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In re claim 10, Cathey, Jr. in view of Murphy et al. discloses the method of claim 7, wherein the solution 120 is applied to the substrate 108 at a temperature of between 20°C to 50°C. (col. 2, line 66)

In re claim 11, Cathey, Jr. in view of Murphy et al. discloses the method of claim 7, wherein the solution 120 is applied to the substrate 108 at a temperature of between 30°C to 45°C. (col. 2, line 66)

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Deven M. Collins whose telephone number is (703) 305-7840. The examiner can normally be reached on Monday-Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy, can be reached on (703) 308-4918. The fax phone number for this Group is (703) 305-3432.

Serial Number: 09/801804

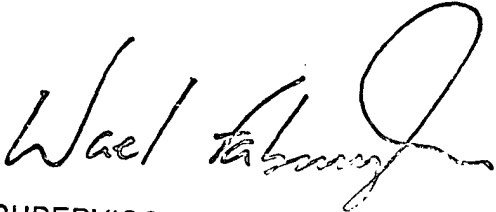
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

DMC

August 29, 2002


SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2000